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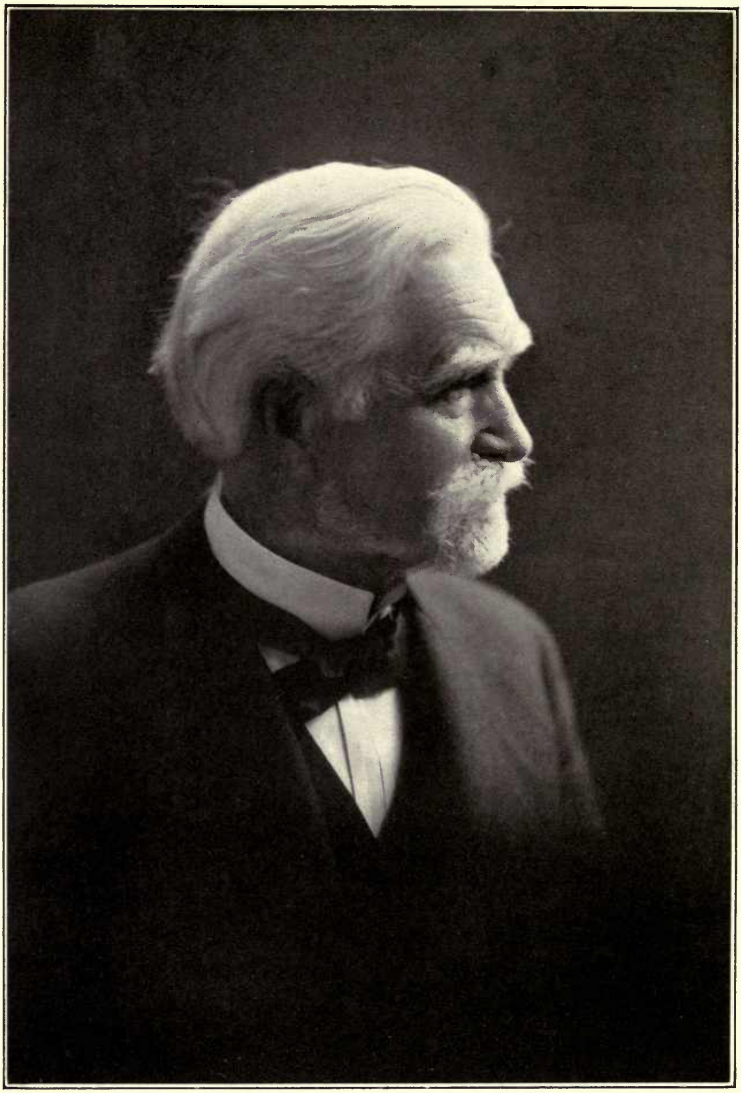

Albert Benjamin Prescott

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December 12, 1832
February 25, 1905

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Prefatory Note

The number of tributes, both public and private, paid to the memory of Dr. Prescott is so great as to make it seem advisable to refer by title only to the Memorials and Resolutions presented by the following:

The Faculty of the College of Dental Surgery of the University of Michigan.

The Instructors of the Chemical Laboratory.

The Alumni of the School of Pharmacy who are now connected with Northwestern University.

The Alumni who are now connected with the University of Maine.

The Faculty of the School of Pharmacy of the University of Kansas.

The Senior, Junior, and Sophomore classes in the Department of Medicine and Surgery.

The Senior and Junior classes in the School of Pharmacy.

The Phi Chi Fraternity.

The Nu Sigma Nu Medical Fraternity.

From the Senate Memorial are omitted such portions as are fully covered by what is contained in the addresses given at the Memorial Service, and in the Biographical Sketch.

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Albert Benjamin Prescott

ALBERT BENJAMIN PRESCOTT was born in Hastings, Oswego County, New York, December 12, 1832.

His parents were Benjamin Prescott and Experience Huntley Prescott.

Albert was the ninth generation in lineage from John Prescott of Standish, Lancashire, England, who came to Boston in 1640. Of the same lineage were also William H. Prescott, the distinguished historian, and his grandfather, Colonel William Prescott, the commander in the battle of Bunker Hill. On a farm located near the then flourishing village of Hastings Albert first saw the light, as the youngest of four children. The old home is still in the possession of the family, and the acre of ground given by his father for the site of a schoolhouse continues to be used for the same purpose.

The father of the household was a man of unusual intelligence and refinement, quiet in manner, and a leader in the community and in the Baptist Church. His hospitable home gave welcome to ministers, teachers, and to others who were especially interested in the well-being of the church and state. He was an ardent advocate of the freedom of the slaves and prominent in all movements of social reform.

The mother was a woman of rare dignity of character and repose of manner, endowed with the gifts of beauty of person and a most amiable disposition.

Blessed with such a parentage and in such a favorable environment, the son, who possessed a keen sense of humor and

an active and quick mind, gave early promise of a career of distinguished usefulness and honor.

But in the ninth year of his age this promise seemed destined to disappointment. From a severe fall resulted an injury to the right knee which made the lad a cripple for life. The best medical skill that could be found failed to make a complete cure. But for the wisdom of his mother, who stoutly opposed amputation of the limb, this physical disability would have become still more serious. For about five years the young lad was confined to the house, often to his bed, for months at a time. But these years of suffering and privation were "the seed-time of his future." His sister, who had graduated from an academy in the neighboring town of Mexico and who afterward became a well-known teacher, gave up her studies in Miss Willard's Academy in order to devote her time to the care and education of her beloved brother. Under her inspiring and gentle guidance his eager mind turned to good reading. The district circulating library, which was kept in the parental home, contained a good collection of choice books. In those years the invalid boy made the acquaintance of many volumes of history and of travel in foreign lands, but the English poets became his especial delight. He early showed marked ability in writing. As he had no companions of his own age to whom he could communicate his thoughts and purposes, he formed the habit of committing these to paper and of writing short reviews of the books that he had read. His fond mother, in later years, never tired of telling about "the stories that Albert used to write when he was a boy."

With the aid of his sister he gained a fair knowledge of Latin, and from other private teachers he received instruction in French and German and in various branches of science.

In 1848, when Albert was in his sixteenth year, the father of the family was removed by death. Fortunately, the young man could soon lay aside the crutches that had so many years

been required to support him, and could assist the older brother, who had generously abandoned his chosen plans of professional study and had decided to remain on the farm to care for the dependent household. For three years the future teacher and scholar did the lighter work on the farm, continuing meanwhile his studies under private instruction.

During these formative years his outlook upon life became widened. He joined a debating club and heard some of the leading platform speakers of the day in a course of popular lectures organized in his native town. Meanwhile, he had become a correspondent of *The Liberator*, the well-known anti-slavery paper published in Boston, and an active worker in this cause.

In 1853 he went to New York City to act as correspondent for the *New York Tribune,* his special work being to gather and edit the news from the suburbs of the city and along the Hudson River as far as Albany.

But his mind was drifting rapidly to more serious and scientific work, and in the year following he decided to devote himself to the study of medicine. His family tried to dissuade him from the pursuit of a profession that was likely to make such heavy drafts upon his slender stock of physical endurance; but his purpose was fixed. To use his own words—"It will be at least a chance for more study and give me a broader life." This purpose gave him great joy and seemed to increase his bodily vigor. While preparing himself for admission to a medical school he taught school in the neighborhood. Chemistry and zoology became his favorite studies.

Prior to entering the University of Michigan, Mr. Prescott spent three years in the office of Dr. Greenleaf, of Brewerton, N. Y., a physician of recognized ability who enjoyed a large practice.

In 1860 he came to Ann Arbor and entered the Department of Medicine and Surgery of the University of Michigan.

After the first course of lectures he was detained for one year by his preceptor, who claimed his student's services as his assistant. In the fall of 1862 he returned to the University and became a student assistant to Professor Douglas, a position which he filled until his graduation in March, 1864.

In July, 1864, Dr. Prescott, after passing the regular examination for medical service in the United States Army, received the appointment of Assistant Surgeon in the volunteer service, and was first assigned to duty in the Totten Hospital of Louisville, Kentucky. A little later he became a member of the Medical Board of Examiners and Chief Surgeon of the Foundry Hospital in the city above named. After a few months of service in this hospital he was appointed to the still more responsible post of Chief Surgeon of the Jeffersonville General Hospital, which was one of the largest hospitals erected in the time of the civil war, and which was subsequently dismantled under the supervision of Dr. Prescott.

He was honorably discharged from service in the army August, 1865, with the rank of Brevet Captain.

Immediately upon leaving the army Dr. Prescott entered upon his life work, being appointed Assistant Professor of Chemistry and Lecturer on Organic Chemistry and Metallurgy in the University of Michigan.

When the School of Pharmacy was organized, in 1868, Dr. Prescott was charged with the work of its administration. He enlisted at once in behalf of superior laboratory methods and higher standards of pharmaceutical education. In 1870 he was promoted to the professorship of Organic and Applied Chemistry and Pharmacy. He served as Dean of the School of Pharmacy from 1876 and as Director of the Chemical Laboratory from 1884 until the time of his decease.

His fruitful work as a teacher and an investigator, and his numerous contributions to his chosen science, are amply

set forth in the addresses and memorials that follow and in the bibliography of his writings.

In 1885 Dr. Prescott was honored by the United States Government with the appointment for the annual assay of the coinage of the mint.

Dr. Prescott received various well merited academic honors and distinctions. The earliest was his election as Fellow of the Chemical Society of London in 1886. The same year his Alma Mater honored him with the degree of Doctor of Philosophy, and the American Chemical Society by electing him as its President. He was the first presiding officer of the conference of American Pharmaceutical Faculties, and was honored with the Presidency of the State Pharmaceutical Association, and, in 1900, of the national body.

In 1891 the American Association for the Advancement of Science elected him as its President. His own Alma Mater conferred upon him in 1896 the honorary degree of Doctor of Laws, and a similar distinction was bestowed upon him, in 1903, by Northwestern University.

He presided at the Congress of Chemists held in connection with the World's Fair at Chicago in 1893, and over the chemists who convened at the recent Scientific Congress held in St. Louis.

In 1898 he was elected to membership in the American Philosophical Society of Philadelphia, and, in 1892, to honorary membership in the Philadelphia College of Pharmacy.

Incessant and manifold as his labors were in his own profession, Dr. Prescott took an active interest in all intellectual progress, and was ready to give aid and encouragement to many beneficent causes.

He had a keen appreciation of whatever was beautiful, especially in Nature. He enjoyed a wide outlook on the world. He visited Europe three times, twice for professional study and the last time, in 1901, for a pleasure tour through England and Wales.

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Remarkably methodical in the conduct of his work, he found time for the companionship of his friends and for the discharge of numerous duties as a citizen and as a member of religious and benevolent organizations. Thoroughly devoted to his own science and the work of his own department, he felt that he belonged to the University, and he never asked to be excused from any service for the promotion of its welfare.

He loved his students and had a sincere interest in all the alumni of the University. The last letter he ever dictated, signed when the hand of death was already upon him, is so full of the spirit of personal affection for his former students that it seems proper to give it here as characterizing this devoted teacher.

ANN ARBOR, Feb. 21, 1905.

MICHIGAN ALUMNI,
Milwaukee, Wisconsin.

Gentlemen:—

I have great pleasure in giving my greetings to all the University of Michigan alumni assembled in the annual Milwaukee meeting, and very greatly regret that I cannot be with you in person. I desire especially to express my grateful appreciation of your very kind personal invitation for this your meeting in 1905. I recall, with very great pleasure, my personal friendships with the members of all departments of the University of Michigan now resident in Wisconsin. Michigan and Wisconsin are reciprocally bound together by common interests and common standards of university advancement. To each one of you, again, I wish to extend the heartiest of greetings.

Very sincerely yours,

ALBERT B. PRESCOTT.

That he in turn enjoyed the unfeigned respect and admiration of his students is abundantly evident from the numerous tributes of affection paid to his memory by them.

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Early in his career the wisdom and greatness of Dr. Prescott's character came to view. When in 1873, at the first meeting of the American Pharmaceutical Association, the delegate of the School of Pharmacy of the University of Michigan was rejected on the ground that this school did not require the necessary experience for a diploma, "Professor Prescott," to use the words of an eyewitness, "instead of complaining and leaving the meeting in a huff, joined the organization, and has been with it from that day to this as one of its most active and distinguished members;" and it is fitting to say of him:

> "That man is great and he alone
> Who serves a greatness not his own."

In the more intimate and sacred relations of life Dr. Prescott exemplified the graces and virtues of a beautiful and lofty character. He was the Christian gentleman always and everywhere.

Firm and unyielding in his devotion to principle and duty, yet charitable and kind in his judgment of others, he held "the faith in the bond of peace and in righteousness of life."

Reverent and loyal to the past, he was openminded towards the present and eager to welcome new truth in religion as in science. In one of his journals his attitude towards religious truth is indicated in these words: "None of us by searching can find God out, but if we listen we can each of us hear His voice in our hearts bidding us to worship Him. The soul must trust to *its instincts* in matters of spiritual life; even as the lower animals live by instinct in this our life of reason; aye, even as we ourselves breathe the air by which our bodies live." Dr. Prescott united with the Presbyterian Church of Ann Arbor in 1874, and was for many years, until the time of his death, one of its official board. His wise counsel and his beautiful life are a precious inheritance to this communion.

He was married in 1866 to Miss Abigail Freeburn, of Ann Arbor. Never was there a more perfect union of accordant minds. The quiet joys and deep satisfactions of that peaceful home no words can fittingly describe. An adopted son held in Dr. Prescott's heart the place of an own child, who in turn loved him as his own father.

After an illness of several weeks in which hours of pain and suffering were endured without a murmur or complaint, comforted by an unfaltering trust in Christ as his Saviour, Dr. Prescott entered into his rest on February 25, 1905. On the 28th day of February the funeral service, conducted by his pastor, the Rev. J. Mills Gelston, D. D., was held at the home which for so many years had been blessed by his presence.

As he was tenderly borne to the house appointed for all the living, one feeling overmastered us all:

"I wondered what it was that died?
The man himself is here,
His modesty, his scholar's pride,
His soul serene and clear.

These neither Death nor Time shall dim;
Still this sad thing must be—
Henceforth I may not speak to him,
Though he can speak to me."

Memorial Service

Memorial Service

In honor of Professor Albert Benjamin Prescott, M. D., Ph. D., LL. D., a memorial service was held under the auspices of the faculties and students of the Departments of Medicine and Surgery and of Pharmacy, in Sarah Caswell Angell Hall, February 28, 1905, at 10 o'clock. Following a prayer by the Rev. Dr. Gelston, President Angell, Dr. Vaughan, Professor D'Ooge, and Dr. Herdman spoke in appreciation of the life and work of their colleague. Following is the text of the addresses.

President James B. Angell—

The University has met with an irreparable loss. Every one of us has met with a great personal loss. We gather here for a little in order that we may speak a few words, however inadequate, of our friend who has gone before.

Dr. Prescott was a man of singular modesty. Perhaps that would strike one who knew him well as his most characteristic trait. With all his attainments he was a man who was never assuming. He was modest almost to a fault. He effaced himself in the presence of others, before whom he might well have asserted himself.

He was also a man of most winsome amiability. Though reserved in temperament and not moving rapidly to make friendships, I think that no man was more loved by those who knew him. His heart ran out with good wishes for all, and wherever it was in his power to render service to any man he was more than swift to render it.

Yet it would be a great mistake to suppose, because of these qualities, that he was a man without positive traits. He

had well established convictions and to these he adhered with great firmness. He had great persistence in his work. Whatever plans he had formed he pushed to the very end. There lies in my drawer now a paper, one of the last he wrote, in which he sketched an elaborate plan for the construction of a new chemical laboratory, and I have no doubt that when it is built, it will follow the lines which he has laid out, and I trust, as do you all, that it will bear his name.

He was a man of the highest ethical and religious temperament, of the simplest character, and the purest motives. Ever courteous to others and catholic toward all, yet he was firm in his own deep-seated principles of right and truth. His life was so impressive in its moral influence that every one held him in highest esteem. In the religious organizations of the University and the people of his church he ever felt a deep interest; and I have no doubt that he ever looked with the most earnest desire for the realization by them of those lofty moral and religious ideals which were to him the dearest things in life.

His devotion to the University was absolute. The longest of any of us in its service, he was unsurpassed by any in fidelity. I think his colleagues will agree with me, that no man carried greater weight with us by his opinions and counsels. He had an eminently judicial mind. He looked on problems from all sides with large views of what a University should be, and with high ideals and the loftiest scholarship he helped us shape our plans.

He was tender in his affections toward the graduates who had gone out into life. On Wednesday last when I was with him and was leaving to go to the Alumni meeting in Milwaukee, to which he had also been invited, I said to him: "If you can dictate a few lines to your Milwaukee friends I am sure they will be delighted." In an hour or two there came to my house a note dictated by him and signed with his own hand.

I took the note with me and it was read on Friday night to the great gratification of his former students. I suppose this was the last signature that he made; and it was characteristic that it should be a communication to his old students whom he loved.

Such a character as this is a treasure to us which we cannot too highly prize. I hope it will ever be an inspiration to us all in the years in which we remain.

Dr. Victor C. Vaughan—

Mr. President, Colleagues, and Students:

It has fallen to my lot to present to you a brief statement of the scientific work of Professor Prescott. This is not an easy task and it will necessarily be done in an imperfect and incomplete manner. His research covers a wide range in analytical, pharmaceutical, and organic chemistry. His contributions have appeared originally for the most part in American and English journals and many of them have been translated and have appeared either in full or in abstract in German and French publications. His first paper, so far as the writer knows, appeared in the *Engineering and Mining Journal* for December, 1869. It dealt with the subject of blow pipe analysis and covered the methods for the dry assay of gold, silver, lead, and copper. In this, his first paper, Dr. Prescott has written tersely and clearly. His directions are sufficiently minute for the intelligent student to follow and yet wholly free from unnecessary duplication of words. His style is clear without prolixity and terse without obscurity.

In the following year (1870) he contributed to the *Chemical News* of London a description of an apparatus devised by himself for rapid vaporization with limited heat. This article was widely abstracted by chemical journals in other languages, and was the first step in the development of his international reputation as a research student. Subsequent contributions

of value followed along like lines and met with the same extended notice.

The first edition of Douglas and Prescott's Qualitative Analysis, which, in successive editions and with various changes in both title and content, has been the guide of hundreds of beginners in chemistry, appeared in 1874, and was immediately recognized as a most satisfactory laboratory manual. This book continues to be widely used in laboratories and is probably today the best known book on the subject in this country. Professor Prescott's inclination towards organic chemistry began to crystalize in the early seventies as was shown by the appearance of his "Outlines of Proximate Organic Analysis" in 1875. This, the first text on this subject in the English language, was immediately recognized both in this country and England as the standard. Of it the *Chemical News* of London said: "Organic analysis may be described as a comparatively untrodden field. We trust that the author will find opportunity to continue the important undertaking on which he has entered." The *Mining Journal,* also of London, added: "An outline which, if not perfect, will assuredly form the basis upon which the future of organic analysis will be built. A work which is well worthy of recognition as a text-book both in England and America and upon the utility of which the author may well be congratulated." Later, Dr. Prescott produced his larger work on proximate organic analysis, the most complete text upon this subject in the English language.

The publication in the same year (1875) of his Monograph on "The Chemical Examination of Alcoholic Liquors" extended the author's reputation as a writer of successful text-books, and this reputation, so largely due to the thoroughness of his knowledge and the clearness of his statement, has not only continued, but has grown into full fruition during the thirty years that have elapsed since his first texts were written.

For many years Professor Prescott has published under the head of "Contributions from the Chemical Laboratory of the University of Michigan" the research work done by students under his direction. Like other great teachers of science he has been most liberal in the help rendered to his students. He always took great pleasure in inciting his students to undertake research. In his quiet way, which his old students know so well and love so dearly, he has supplied them with ideas, directed them in the prosecution of the work, and then published the results under the student's name. The worth of such a clear headed, big hearted instructor to the students who are fortunate enough to come under his influence is greater than gold, and it is no wonder that the chemical laboratory of this University became the birthplace of such chemists as Wrampelmeier of London, Young of Northwestern, Dennis of Cornell, Ewell and Crampton of the Agricultural Department, Hesse of Germany, the late Henry Parsons of New York, and our own Gomberg, whose epoch making researches on the valence of carbon has brought to the University great honor from the leading chemists of the world.

Dr. Prescott's papers reporting research in analytical, pharmaceutical, and organic chemistry, with those credited to his students and done under his supervision, number probably about two hundred, and among these are many of great value, while all are real contributions to science. As a toxicologist Dr. Prescott has won a high place, especially for the precision of his investigations. No one, certainly since the time of Wormley, has given more attention to the delicacy and limitations of tests for alkaloidal and other organic poisons, and his contributions along these lines are to be found not only in journals but also in the more recent encyclopædic works on medical jurisprudence, such as the system of Hamilton and the treatise of Haines and Peterson. It has been my fortune to serve as expert with him in many cases, sometimes as

colleague and occasionally as opponent. His testimony was always clear, scientific, and free from partisan bias. The science of toxicology has been greatly enriched by his researches. In sanitary chemistry Dr. Prescott has done much valuable work. The chemical examination of drinking water and the efficiency of filtration have been matters of investigation along these lines. The detection of foreign fats in butter and of coloring matter in butter substitutes he has made the subjects of special investigations, and among his students, Geissler, Cochrane, Ewell, Crampton, Doolittle, VanSlyke, and others have become leaders in their studies of foods and food adulterations. He has rendered the State of Michigan signal service in the aid he has given different food commissioners in enforcing the pure food laws. He participated most heartily and effectively in the detection of harmful preservatives in foods.

As Dean of the School of Pharmacy since its establishment in 1876, he has always worked for high ideals in the profession, and his students have taken advanced positions in many states. His influence for good has been largely felt in both the state and the national pharmaceutical associations. For many years he has served either as an active or advisory member of the Committee on the Revision of the National Pharmacopœia, and many of the methods found in this official publication owe their excellence to his investigations in his laboratory.

As a member of the Medical Faculty for the past forty years and as the senior member since the death of Dr. Ford in 1894, his colleagues have looked to him for wise counsel and unprejudiced advice, and it is needless to say that they have never been disappointed. Although not in active practice since he resigned from the medical service of the army in 1865, he has always been keenly alive to the best interests of the profession and has made valuable contributions to the local, state, and national societies. He was one of the organizers of

the American Chemical Society and one of the chief contributors to its official publication. He served as President of this society in 1892, and as senior member of the Michigan branch he has done much to keep the local organization in working harmony with the national body. He served as chairman of the chemical section of the American Association for the Advancement of Science in 1887, when his address on "The Chemistry of Nitrogen as Disclosed in the Constitution of the Alkaloids" was given. He presided at the World's Congress of Phemists in Chicago in 1893, and was President of the American Association for the Advancement of Science in 1891.

The work done by Murrill under Dr. Prescott's directions for the Committee on the Revision of the Pharmacopœia in 1898 involved laborious research in the literature of the subject and much patient work in the laboratory. This paper was published by the Committee on Revision in a pamphlet of fifty-eight pages. The chemical bibliography of morphine prepared by Brown under Dr. Prescott's supervision embraces two hundred and sixty-three titles with a condensed abstract of each, collected from English, French, German, Italian, and Russian literature, and for the time covered—1875 to 1896—is the most complete found in any language. The research on "The Caffein Compound in Kola" carried out with Knox under the Stearns Fellowship adds much to our knowledge of plant chemistry in general and of the caffein compounds in particular.

Probably the *Opus Magnum* of Dr. Prescott in his research investigations is his work on the Alkaloidal Iodides. This research extended through several years and in it Dr. Prescott had the assistance of several students, notably of Gordin. As early as 1839 Bouchardat proposed that a solution of iodine in potassium iodide be used as an alkaloidal precipitant. This proved to be an exceedingly delicate test

giving visible precipitates with some of the more important medicinal alkaloids in dilutions of one part to 50,000 to 100,000 parts of water. In 1861 Wagner recommended a deci-normal solution of iodine in potassium iodide for the volumetric determination of the alkaloids. The great Danish chemist, Jörgensen, later in the sixties used the alkaloidal periodides in the study of structure, but it remained for Prescott and his students to study the formulæ of many of the periodides and to make the volumetric examination of the alkaloids with this reagent a practical success. In selecting the research on the alkaloidal iodides as the greatest work done by Dr. Prescott, it is possible that I am in error and that the palm should be given to his method for the assay of opium adopted in the Pharmacopœia in 1880 and again in a modified form in 1890.

I am aware of the fact that my presentation of the scientific work of our late teacher and colleague is unsatisfactory, probably more so to me than to any one else. To have given the bare titles of his papers would have taken more time than I have had at my disposal, but I have endeavored to give you some general idea of the valuable work he has done. In presenting this summary I have knowingly exaggerated nothing, because he would not have wished it so. Twenty years ago Dr. Prescott read a tribute to one of his best beloved students, Henry B. Parsons, and in this tribute may be found the following: "Our words, poor at best, must not be unmeasured terms of amplified encomium, for such would ill suit the true scientific spirit of our departed friend. For him no tribute of speech can be more proper than a simple and just recital of the services he has rendered during the period granted him for the labors of life." These, his own words, fitly describe him whose death we today mourn. He needs no eulogy. The forty years spent as a teacher and investigator in this University have been for him full of labor and love for his labor. Probably we have

never until today realized how much he has accomplished. He is dead, but his labor has not been lost. In writing of a departed colleague some years ago, Dr. Prescott said: "A work that is wrought out in the endeavors of science acquires a certain momentum. When the worker is taken away from his place among men the work does not pause, being carried on by the power of previous impulse. In any realm of thought the force imparted by an earnest man is often seen more plainly and estimated more fairly after death has taken him away. So separate and secluded are the channels of men's labor, under the prevailing tendency to division of effort, that people do not become aware of the toil of their contemporaries until some occasion calls for the writing of a record." Again, how aptly his words apply to himself. We have never appreciated him so highly as we do today. In our daily companionship with him we were always aware of his goodness and quite forgot his greatness, but both his goodness and his greatness are immortal and will prove helpful to the race in its struggle up that rugged mountain of effort beyond which lies the promised land of human perfection.

Professor Martin L. D'Ooge—

My acquaintance with Dr. Prescott began in 1867, when I returned to the University and became a member of the Faculty of the Department of Literature, Science, and the Arts.

I recall, however, seeing him in the days when we were both students, for it happened that we lived for a time in the same part of the town and that we sometimes passed each other on the street. And I well remember how much I was then impressed with the apparent eagerness and vigor with which this somewhat frail young man, in spite of his physical disability, went daily to the pursuit of his task.

As my acquaintance with him gradually became more inti-

mate and ripened into friendship, I learned more and more to esteem and to admire the qualities of his beautiful character.

Dr. Prescott was one of the most modest of men, and I would not speak a word that would seem to him to be one of fulsome praise; but I believe I have full warrant for saying that his life and character approached the ideal of human perfection so nearly as to be conspicuous and rare.

If I were to select a single trait of this rare character that always impressed itself upon my mind as most marked, it would be the remarkable combination of gentleness and strength, in which gentleness held the balance of power.

Not a harsh word, nor an unkind judgment was ever heard to fall from his lips, and yet there was strength of will, firmness of purpose, that could be as unyielding as adamant.

It was in my long time intercourse with Dr. Prescott as fellow-member of the Board of Trustees of the Students' Christian Association that I learned to know him best, and to value the qualities of his well-balanced character. That judicious temper that characterized all his words and deeds was frequently displayed in his deliberations with this body. How well-considered were his counsels, how unerring and true was his judgment, slowly matured but firmly held and clearly stated. It was in this relation also that I had frequent opportunity to observe that unaffected and simple religious faith and that sweetness of spirit that made his life a benediction wherever he was known, and a potent force in building up all that is highest and best in this community.

There are many lessons to be drawn from the life of this good man whose departure from us we mourn today. But there are two that strike me as particularly noteworthy.

First, that a disability that seems to be a hindrance to one's success in life may be overcome and be made in some other way the means of advantage and good.

Dr. Prescott became disabled by a fall when he was a boy nine years of age. From that time until he was eighteen—the period when boys are growing strong and enjoying the sports of youth—he was a cripple obliged to walk on crutches. This sad accident which resulted in permanent deprivation never made him morose and discontented, but spurred him on to seek his recreation in other ways and intensified his natural fondness for reading good books. In those years of his greatest disability he stored his mind with useful knowledge, learned by heart favorite passages from sacred scriptures and from the poets, and acquired a love of good letters which cheered and comforted him all his days. Never can I forget how touchingly beautiful it was to hear him recite from memory a little verse from Tennyson a fortnight ago, as, sitting propped up by his pillows, he referred to his fondness for the great poet laureate. And I have often wondered at the brightness and cheeriness of this dear friend when I reflected upon the limitations that had handicapped him through all the course of his life.

The second lesson his life teaches us is implied in its all-roundedness and remarkable balance. It was a many-sided life in perfect accord and harmony. Dr. Prescott was, as we have heard, eminent as a chemist. He cherished high ambitions in his science, ambitions that were gratified and honored by his compeers. He was thoroughly devoted to the interests of his own chosen department, but he was deeply interested also in all the activities of the University; and no plan for promoting its growth and increasing its usefulness and raising its standard of efficiency, failed to find in him a warm advocate and staunch friend.

But he did not stop here; he was not content with being simply a chemist, and a University professor; he was also a *man* and a man of wide sympathies and far-reaching interests. *"Nil humani a me alienum puto"* could be said by him with

perfect truth. He filled his place as a citizen of the community; he allowed himself time to enjoy his home and the companionship of friends; ambitious student and teacher that he was, he yet knew how to give of his time and strength to the church with which he was connected, and to any cause which he believed was likely to benefit the community and the world in which he lived.

And so it was a life of many satisfactions and pre-eminently useful in manifold ways. What a fruitful source of good this life has been to this University and to those who have felt its impress, no one can justly estimate. The memory of this singularly beautiful life and gracious character will not fade away from our recollection.

As we take leave of this beloved friend and colleague, and reflect once more upon his life and character, we recall the words of the old Greek philosopher in which he describes the just and good man and writes them as his epitaph:

"A man who as completely as possible was squared and made consistent with virtue, in word and in deed."

Dr William J. Herdman—

It is a solemn responsibility he assumes who undertakes to place an estimate upon a human character or to portray the features of a life that is spent, even though he confine his attempt to certain phases only of that life. Truth, a just balance, a righteous judgment, will alone stand the test of time, and this should be the aim if we wish what we may say to endure, and gain from the analysis the lessons which that life teaches.

Close association is not always the best atmosphere in which to get clear vision of another's merits or demerits, for our perspective is too liable to distortion and the rays of light to be chromatic. And yet long years of fellowship and daily association afford the opportunity for lives to touch at

many points of contact and furnish the material for a true estimate of the entire round of faculties possesed by such associates.

If time proves that estimate to be untrue, feeling and prejudice have entered to disturb the balance, or certain essential factors were overlooked.

It is not expected of me nor am I prepared to attempt a complete analysis of the character of this our associate, our teacher, our friend, but we who have known him can all with confidence affirm that nothing would be more foreign to his desire than that the writer of his biography should indulge in fulsome praise or over-state, in the minutest degree, the value of his life-work.

My first acquaintance with Dr. Prescott began thirty-five years ago when, an undergraduate in the literary department, I was engaged in some self-imposed chemical analysis that required the use of the spectroscope, an instrument which up to that time I had not seen and did not know how to handle. I learned that he had been doing some work with this instrument and therefore sought his aid. The kindly reception which he gave me and the evident sincerity of his assurance that the demand I had made upon his time, which was not inconsiderable, was by no means a trouble but rather a source of pleasure to him, made such an impression upon my mind of his innate kindness and gentility that it would never have been effaced, even if innumerable instances of it had not come to my notice in subsequent years. Many a man with the enthusiasm of the scientist and the teacher might respond to an appeal to his superior knowledge for assistance even when compliance subjected him to temporary inconvenience, but it requires the inborn courtesy and the spirit of brotherly kindness to be ever and at all times ready and willing as he was to respond to such demands, and to uniformly impress the worthy applicant that such appeals were never irksome. And to this as a funda-

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mental characteristic of his nature all bear testimony who have known him.

Kindness, gentleness, and self-sacrifice combined with large and exact knowledge and with a disposition and a capacity for imparting it, was the estimate of this man which I gathered from that first interview, and the long stretch of intervening years, with their rich store of observation of and more intimate association with him, have served but to confirm the impression then made.

There are those present who are better informed than I am as to his professional attainments, the value of his contributions to science, his administrative capacity, and his personal relations with his students. Under each of these headings there is much to be said by way of commendation before the story of his life-work is complete. But as to his conscientiousness in the fulfillment of a trust or in undertaking a task assigned him, and of his thorough and methodical plan of discharging all obligations which he assumed, I can speak from abundant experience with him in many fields of labor. He was the ideal candidate for places of trust. His scientific training had developed in him an accuracy of observation, a patience in gathering evidence, a deliberateness in drawing conclusions, that made him a valuable member of a governing board or trustee of property needing wise and original management. He seldom ventured an opinion that was to serve as an incentive for action that was not the result of mature and well-balanced consideration. An opinion so reached was not to be easily shaken and the tenacity of purpose which he often exhibited in maintaining his ground was but the necessary result of a conviction that he had carefully weighed the evidence and it would justly bear no other interpretation. And yet while very positive, as he usually was, in the opinion he expressed, it was always advanced with such a modesty and deference to the opinion of others born of his innate courtesy,

that it won its way as much by the *manner in which it was presented* as by the force of the reasoning on which it was based.

Many of our charitable and religious organizations in this city, state, and nation, have benefitted by his guidance and his counsel, and he never wearied or shrank from responding to their calls. Deeply interested as he always was in the highest welfare of his fellows, he discharged his duties of citizenship with the same conscientiousness that characterized his conduct in other spheres of action. Student and investigator, pre-eminently, he yet found time and inclination to cultivate the acquaintance of the humble citizens, with many of whom he was on the most cordial relations; neither was he a stranger to the poor and the distressed, who found in him at all times a sympathetic friend. Wherever within the circle of his acquaintance the shadow of sorrow or affliction hovered, there his heart and thought found expression in some fitting word of comfort or some kindly deed.

Thus briefly have I passed in review certain of the more salient qualities of mind and heart which characterized our associate, our teacher, and our friend, and endeared him in life to us, and which henceforth will ever be inseparable from him in blessed memories.

But I should fall far short of my duty and fail in doing full justice to his memory did I not for a moment direct your attention to that deep religious conviction and abiding faith in a Divine Creator and Ruler of the Universe which was his inspiration and his source of strength.

His nature was essentially religious; his life a daily exposition of one in harmony with the beneficent Ruler; and he delighted in the thought that he was a humble revealer of certain of His gifts to mankind stored up in the treasure vaults of chemistry. Witness what he says in an address delivered before a learned society of which he was the presiding officer:

"The pride of pure science is justified in this, that its

truth is for the nurture of man; and the ambition of industrial art is honored in this, that its skill gives strength to man. It is the obligation of science to bring the resources of the earth, its vegetation and its animal life, into the full service of man, making the knowledge of creation a rich portion of his inheritance, in mind and estate, in reason and in conduct, for life present and life to come. To know creation is to be taught of God."

Again, I quote from an address entitled "Religious Teachings of Chemical Science," delivered by him some few years past before the students of this University:

"The greatest chemical skill cannot alter an atomic mass by any fraction of its weight, nor can it effect so much as the slightest variation in any chemical constant. To be a learner is the utmost of human knowledge. To liberate the creative forces and make way for them is the utmost of human skill. In synthesis or analysis the highest purpose of the student is the same, to find out the value of creation, in the 'things that are made.' "

And again:

"The task of the chemist is rich with many meanings at every step of the way. It is most rich when the hand of God is recognized in all the fashionings of nature, and His truth is seen to be the strength of the sands under our feet."

In these utterances we seem to behold the spirit of the man standing in nature's storehouse and awaiting in reverence and yet with confidence for the gifts which a loving Father had, 'from the beginning,' prepared for his children, and which but awaited such messengers as he to bear them to their destination.

This is the attitude of mind and heart by which this teacher approached his daily task. He sought for no other end than the right interpretation of the truth which the Creator has stored up in the secret vaults of matter. He looked for no

higher reward than to hear from Him, whose faithful follower he ever strove to be, now that his course is run, his sheaves gathered, the comforting words of commendation "Well done." Who can rightly measure the potentiality of such a life as this?

It is an enviable, a glorious opportunity which is granted the teacher, and fortunate indeed is he who grasps it rightly from the beginning and fully comprehends the significance of his responsibilities. We are prone to forget that the instruction we impart drawn from books, from meditation and research, is but a small share of the lessons we impart to those who wait upon our teaching. The living man is ever an object lesson before them. His character, his personality, the manner in which he has himself responded and reacted to the experiences of life; the effect upon him of the material, the mental, moral, and spiritual forces about him, is the experiment which silently impresses its lessons on every pupil.

Am I wrong in the belief that in this great teacher it is the life, the character which he daily exhibited before his pupils throughout his long period of service in this University, that will bear the richest fruitage by its transforming influence on the lives of others, and that many who have felt the inspiration of that life will rise up at the final accounting and call him blessed?

Memorials and Resolutions

Memorials and Resolutions

SENATE MEMORIAL.

A TRIBUTE TO ALBERT BENJAMIN PRESCOTT, M. D., F. C. S., PH.D., LL.D., LATE PROFESSOR OF ORGANIC AND APPLIED CHEMISTRY, DEAN OF THE DEPARTMENT OF PHARMACY, AND DIRECTOR OF THE CHEMICAL LABORATORY IN THE UNIVERSITY OF MICHIGAN, BY HIS COLLEAGUES OF THE UNIVERSITY SENATE.

* * * * * *

As an author, Dr. Prescott has become widely and most favorably known. The first edition of "Douglas and Prescott's Qualitative Analysis" appeared in 1874, and was at once recognized as standard. This book has passed through many editions, and now, under the authorship of Prescott and Johnson, is annually used by hundreds of beginners in Analytical Chemistry. His "Outlines of Proximate Organic Analysis" was the first text on this subject in the English language, and its successor is now the most complete treatise on the subject. His monograph on "The Chemical Examination of Alcoholic Liquors" was first issued in 1875, and remains a standard authority. His success as an author of text-books is due to his thoroughness of knowledge and clearness of statement.

As a toxicologist, Dr. Prescott has won a high place, especially for the precision of his investigations. No one, certainly since the time of Wormley, has given more attention to the delicacy and limitations of tests for alkaloidal and other organic poisons, and his contributions along these lines are to be found

not only in journals, but also in the more recent encyclopædic works on medical jurisprudence, as that of Haines and Peterson. As an expert witness, his testimony was always clear, scientific, and free from partisan bias.

In sanitary chemistry, Dr. Prescott has done much valuable work. The chemical examination of drinking water and the efficiency of filtration have been matters of investigation along these lines. The detection of foreign fats in butter and of coloring matters in butter substitutes have received his attention, and among his students, Geissler, Cochrane, Ewell, Crampton, Doolittle, Van Slyke, and others have become leaders in their studies of foods and food adulterations. He has rendered the State of Michigan signal service in the aid he has given food commissioners in the detection of harmful adulterations and preservatives, and in the enforcement of the pure food laws.

As Dean of the School of Pharmacy since its establishment in 1876, he has always worked for high ideals in the profession, and his students have taken advanced positions in many states. His influence for good has been largely felt in both the state and the national pharmaceutical associations. For many years he has served either as an active or advisory member of the Committee on the Revision of the National Pharmacopœia, and many of the methods found in this official publication owe their excellence to his investigations in the laboratory.

As a member of the Medical Faculty for the past forty years and as the senior member since the death of Dr. Ford in 1894, his colleagues have looked to him for wise counsel and unprejudiced advice, and it is needless to say that they have never been disappointed. Although not in active practice since he resigned from the medical service of the army in 1865, he has always been keenly alive to the best interests of the profession and has made valuable contributions to the local, state, and national societies.

For many years Professor Prescott has published under the head of "Contributions from the Chemical Laboratory of the University of Michigan" the research work done by students under his direction. Like other great teachers of science, he has been most liberal in the help rendered to his students. He always took great pleasure in inciting his students to undertake research. In his quiet way, which his old students know so well and love so dearly, he has supplied them with ideas, directed them in the prosecution of the work and then published the results under the student's name. The worth of such a clear-headed, big-hearted instructor to the students who are fortunate enough to come under his influence is greater than gold, and it is no wonder that the Chemical Laboratory of this University became the birthplace of such chemists as Wrampelmeier of London, Young of Northwestern, Dennis of Cornell, Senier of Ireland, Hesse of Germany, the late Henry Parsons of New York, and our own Gomberg, whose epoch-making researches on the valence of carbon have brought to the University great honor from the leading chemists of the world.

Dr. Prescott's papers reporting research in analytical, pharmaceutical, and organic chemistry, with those credited to his students and done under his supervision, number probably about two hundred, and among these are many of great value, while all are real contributions to science.

His contributions have appeared originally, for the most part, in American and English journals, and many of them have been translated and have appeared either in full or in abstract in German and French publications. His first paper appeared in the *Engineering and Mining Journal* for December, 1869. It dealt with the subject of "Blow-Pipe Analysis," and covered the methods for the dry assay of gold, silver, lead, and copper. In this, his first paper, Dr. Prescott has written tersely and clearly. His directions are sufficiently

minute for the intelligent student to follow, and yet wholly free from unnecessary duplication of words. His style is clear without prolixity and terse without obscurity.

In the following year (1870) he contributed to the *Chemical News* of London a description of an apparatus devised by him for rapid vaporization with limited heat. This article was widely abstracted by chemical journals in other languages and was the first step in the development of his international reputation as a research student. Subsequent contributions of value followed along like lines, and met with the same extended notice.

The work done by Murrill under Dr. Prescott's directions for the Committee on the Revision of the Pharmacopœia in 1898 involved laborious research in the literature of the subject and much patient work in the laboratory. This paper was published by the Committee on Revision in a pamphlet of fifty-eight pages. The chemical bibliography of morphine prepared by Brown under Dr. Prescott's supervision embraces two hundred and sixty-three titles, with a condensed abstract of each, collected from English, French, German, Italian, and Russian literature, and for the time covered—1875 to 1896—is the most complete bibliography on this subject to be found in any language. The research on "The Caffein Compound in Kola" carried out with Knox under the Stearns Fellowship, adds much to our knowledge of plant chemistry in general and of the caffein compounds in particular.

Probably the *Opus Magnum* of Dr. Prescott in his research investigations is his work on the Alkaloidal Iodides. This research extended through many years, and in it Dr. Prescott had the assistance of several students, notably of Gordin. As early as 1839 Bouchardat proposed that a solution of iodine in potassium iodide be used as an alkaloidal precipitant. This proved to be an exceedingly delicate test, giving visible precipitates with some of the more important medicinal alkaloids in

dilutions of 1 part to 50,000 to 100,000 parts of water. In 1861 Wagner recommended a deci-normal solution of iodine in potassium iodide for volumetric determination of the alkaloids. The great Danish chemist, Jörgensen, later in the sixties used the alkaloidal periodides in the study of structure, but it remained for Prescott and his students to study the formulæ of many of the periodides and to make the volumetric examination of the alkaloids with this reagent a practical success.

Dr. Prescott was most methodical in all his work, and this enabled him to accomplish much in a quiet way. He held responsible positions in many public, charitable, and religious organizations, and in all he was prompt and efficient.

He was a deeply religious man, and all that he did was for the good of his fellows and to the glory of his Creator. He believed in the religion of science and he regarded a chemical discovery as a revelation of the wondrous works of God.

This man of science approached the solution of his chemical problems with reverence and saw in the structure of a molecule a manifestation of the wonderful wisdom of the Creator. In studying the mechanism of matter he never forgot the Master Mechanic, and in admiring the picture he never forgot the skill of the painter.

The University has lost one of its most eminent men and one of its best teachers, and we, the members of this Senate, have lost an honored and beloved companion. We extend to his sorrowing family our deepest sympathy, and spread on our records this tribute to the memory of our beloved colleague, whose charm of manner and unfailing courtesy have so greatly endeared him to us all.

MEMORIAL OF THE AMERICAN CHEMICAL SOCIETY.

[*From the Journal of the Society, September, 1905.*]

In 1861 Dr. Prescott entered the University of Michigan to study medicine and chemistry, and was graduated in 1864 with the degree of Doctor of Medicine. It was often said of the medical department at Ann Arbor in those days that it consisted of a chemical laboratory with a medical school attached; at all events, chemistry formed a very important part of the work and Prescott's interest soon centered in that direction. After graduation he received an appointment as an army surgeon and performed creditable service at several posts until the armies in the field were disbanded. Then he returned to Michigan and began, in the fall of 1865, that honorable and useful career which extended through a period of forty years. He became at once assistant professor of chemistry and lecturer on organic chemistry and soon developed a leaning toward analytical and technical lines.

In 1870 he was made professor of organic and applied chemistry and pharmacy; in 1876 he was made dean of the school of pharmacy, just organized as a separate department; in 1884 he was appointed director of the chemical laboratories of the university, which position he retained until his death. He encouraged the scientific work of a score or more of young men who have since achieved distinguished success in the history of American chemistry.

Outside the University Prescott held many official positions of honor. He gave a large amount of time to various matters of importance to the State of Michigan, especially in the formulation of laws concerning the sale of foods and drugs. In 1876 he became a member of the Chemical Society of London, and in 1880 a member of the Revision Committee of the pharmacopœia of the United States, where his work was of the greatest value. In 1886 he was president of the American

Chemical Society and in the same year vice-president of the American Association for the Advancement of Science; in 1891 he was president of the latter body. In 1893 he was chairman of the section on analytical chemistry at the Congress of Chemists in Chicago, and in 1904 he was chairman of the section on organic chemistry at the St. Louis Congress. As a presiding officer the genial manners of our friend won the admiration of all with whom he came in contact..

The published papers of Prescott amount to 125 or more, and, counting the work done under his direction and published by students, to about 200. Many of this long series dealt with problems in sanitary and pharmaceutical chemistry. In the latter field Prescott became years ago an acknowledged authority, and his work for the various revision committees of the pharmacopœia is of lasting importance. Much of this work had to do with methods of analysis for alkaloids, and two series of investigations must be referred to as of unusual merit; the first of these was on methods of assaying opium, and the processes worked out by Prescott became official by the publication of the pharmacopœias of 1880 and 1890. A good many years ago he turned his attention to the old problem of the nature of the precipitate formed by adding a solution of iodine of potassium iodide to various solutions of alkaloids, and in the course of his studies he worked out accurately the formulas of a number of these periodides, and with some of his students, especially with Gordin, he showed how exact volumetric methods may be based on these reactions. Much of this had been attempted before, but without practical success. The important literature on this point may be found in this journal 17, 775 and 20, 706.

No text-books in analytical chemistry are better known to American students than are those of Prescott. In 1874 (with S. H. Douglas) he published the first edition of the "Qualitative Chemical Analysis," which was followed by a second

edition in 1876, a third in 1880, and a fourth in 1888, each new edition being considerably enlarged and improved. In its present form it constitutes an excellent text-book of general inorganic chemistry. In 1875 two other well-known books were issued, the "Outlines of Proximate Organic Analysis" and the "Chemical Examination of Alcoholic Liquors." Through many years these were our standard authorities in this country, and they enjoyed great popularity. In 1879 a smaller work on analysis with the title "First Book in Qualitative Analysis," was published, and this went through a number of editions. In 1887 Prescott published his larger work on "Organic Analysis," which has been a guide in the labors of many American chemists. Of equal importance in many respects is the chapter on "The Alkaloids in Toxicology," which he contributed to the American Text-Book of Toxicology.

This short resume of his literary work is, however, far from being all that may be said of Dr. Prescott; as a man he was more than respected,—he was loved by his fellows. Through a long series of years he was a regular attendant at the meetings of the American Chemical Society and the American Association for the Advancement of Science, and on the opening days no face was more eagerly sought for than that of Prescott. In his after-dinner talks he was always sensible and kindly with something to say that was worth hearing. At the dinner at the last Cleveland meeting of this Society (1903), especially, he spoke, in a way which must have been touching to all who heard him, of his growing age and of the younger generations of chemists with whom, year by year, he came in contact. He had seen much of the real development of our science in this country and his comments on the work of others were always appreciative. The slightest taint of jealousy or coldness toward the achievements of other chemists never appeared in the judgments of Prescott, and in his whole bear-

ing among men he offered an example of straightforward honesty and simplicity which is rare enough to be noticeable. It may be truly said that the record of American men of science is enriched by the noble life of Albert Benjamin Prescott.

MEMORIAL OF THE MICHIGAN STATE MEDICAL SOCIETY.

The Michigan State Medical Society wishes to put on record recognition of its loss in the death of Dr. Albert B. Prescott, LL.D., Professor of Organic Chemistry, etc., and Dean of the Department of Pharmacy of the University of Michigan. He became a member of this Society in 1883, and his name was placed on the honorary list in 1904. Dr. Prescott was so well known to members of the Society that nothing we may say can add or detract from his deserved fame as a scientific scholar, an authority in the departments of medical and pharmaceutical science, and a contributor to the work in which his professional life was so successfully spent.

The profession of medicine, not only of Michigan, but of the whole country, owes a great debt of appreciation and gratitude to Dr. Prescott for his authoritative contributions to medical science and for the high plane of scientific, professional, and moral standards of his life.

In particular the profession owes much to Dr. Prescott for his labors in exposing the worthlessness of many patent and proprietary medicines by chemical and pharmaceutical analysis. This work was undertaken years ago at the request of the Washtenaw County Medical Society.

His kindly, genial face, his sympathetic nature, his happy combination of scholar and gentleman; learned, without pedantry, amiable, without ostentation; his interest in the good of medical study and practice, endeared him alike to students and practitioners of medicine, and will serve to keep his memory green as his fame is lasting.

This Society honors itself in recognizing and recording its appreciation of the worth and character of Dr. Prescott.

MEMORIAL SESSION

OF THE MICHIGAN STATE PHARMACEUTICAL ASSOCIATION, KALAMAZOO, AUGUST 8, 1905.

President W. A. Hall, of Detroit, introduced the subject of the session in a few feeling words. He said in part:

"Gathered in our annual assemblage, we miss from our number one who was wont to be with us—the Nestor of pharmaceutical advancement in our state. He never allowed a meeting to be held without coming to it if it were possible for him to attend. As an Association we miss him, but there is more to it than that. I miss him personally. You miss him personally. All of us who have come more or less in contact with him, miss him for his counsel, for his pertinent way of saying things, for his homely common sense, for his kindly spirit. To each of us comes the sense of individual loss, for we each recall instances of his individual kindly consideration; we each recognize the help that he has always been to us."

Professor J. O. Schlotterbeck, who succeeds Dr. Prescott as Dean of the School of Pharmacy, spoke as follows:

"During my first year in the school Dr. Prescott gave the instruction in theoretical pharmacy, and so vividly did he elucidate the different operations, either by experiment, verbal explanation, or blackboard demonstration, that they are still fresh in my mind, and I can see the good Doctor now, as plainly as if it were yesterday, lecturing behind the platform of the old room B in the Chemical Building. His unaffected simplicity, unassuming manner, sweetness of character, and interest in his students won for him the respect and admiration of all who received instruction from him.

Of his many remarkable characteristics, his wonderful choice of words impressed me very much. He always enunciated very distinctly, and with such deliberation that it seemed as if every word were as carefully weighed before being spoken as the chemicals or drugs which he balanced up for an important assay or chemical determination. He never used a word too many.

Dr. Prescott was one of the charter members, I think, of the Michigan State Pharmaceutical Association. At all events he was from the first enthusiastically interested in its welfare and success. He took an active part in all its discussions, whether pertaining to educational matters, pharmaceutical jurisprudence, practical pharmacy, or trade interests. He was one of the framers of the first pharmacy bill, and only last year assisted in drafting that measure which, with some modification, has become our present law. I dare say that no one will deny that the clause in the new act, requiring of all candidates for examination a general education equivalent to two years in a high school, stands as a monument to his persistent efforts for more than forty years in behalf of a higher standard of culture among pharmacists.

He has left us; we shall never look into his kindly face again, nor shall we ever have the privilege of grasping his friendly hand, but he has left us a rich treasure, an everlasting heritage, that will grow stronger as time passes, and he has left us an inspiring example."

Professor L. E. Sayre of the University of Kansas was present and spoke feelingly of his departed friend:

"Although a man of ripe years, he seemed to me as one cut off in the midst of his youth. As a teacher in the University, the young made up his environment, and in that environment he was at home, and happy. I think of him as youth in age—youth with all its aspirations, its hopes, its plans. Inopportunely, it seems to us, spectators of this life drama,

the curtain has fallen, the footlights have been extinguished. Is there to be no fruition of the aspirations, the hopes, the plans left thus unfulfilled? Surely there will be, since his spirit lives still in the youths who have companioned with him. The personality of Dr. Prescott has profoundly influenced those who have known him. I cannot describe the influence upon myself,—its nature is too intimate, too sacred; but intellectually, morally, and spiritually, it has made me permanently his debtor."

Mr. J. W. T. Knox of Detroit recalled an incident that showed the universally high esteem in which Dr. Prescott was held throughout the United States. "At the jubilee celebration of the American Pharmaceutical Association in Philadelphia, there were present twenty-one ex-presidents of the Association. Each one, as he marched up and took his seat on the platform, was received with hearty applause, but to no other was there accorded such an ovation as that which greeted our beloved Dr. Prescott. On other occasions, too, there have been similar spontaneous demonstrations in his honor. We are too close to Dr. Prescott to realize what he did or even what he tried to do; just as when standing at the foot of the Washington monument we cannot begin to realize its immensity. Its majesty and beauty impress us only when we see it in due perspective."

Mr. A. S. Parker of Detroit spoke of Dr. Prescott as a man in whose life the ideal was exemplified; kind and helpful to all; possessed of extreme modesty, notwithstanding his greatness; dignified, courteous, yet firm, always a prompt defender of what he considered the right, and yet in the support of his beliefs so gentle and considerate of others that no offense was ever given. In his work as a teacher, in his beautiful home life, in the unconscious influence he exerted over his students and associates, he equally stands in memory as an ideal man.

Other speakers followed, relating incidents from their

personal experience illustrating what had been said of Dr. Prescott's kindness and helpfulness to his students.

At a subsequent session of the Association, Mr. J. W. T. Knox introduced a resolution that a scholarship in the University of Michigan be endowed by the Association as a memorial to Dr. Prescott. The resolution was favorably received, and a committee was appointed to carry it into effect.

RESOLUTIONS OF THE FACULTY OF THE DEPARTMENT OF MEDICINE AND SURGERY.

WHEREAS, After a lapse of many years, the hand of Death has once again been laid upon the Department of Medicine and Surgery, and a beloved friend and colleague, Albert Benjamin Prescott, has been taken from us, happily for him, while still in the possession of his powers and at the post of duty; therefore

Resolved, That in the death of Dr. Prescott this department has suffered an irreparable loss. A man conspicuous for wide and accurate knowledge, of rarest judgment, of unswerving fidelity to his work and to his faith, and unselfishly devoted to the advancement and welfare of this department, he had the admiration and esteem of his colleagues, students, and fellowmen.

Through his great benevolence, his gentleness and unfailing courtesy, he endeared himself to all who knew him, and upon the developing characters of the young men and women with whom he came in contact he exerted a far-reaching and beneficent influence.

As the founder of laboratory research in this University he occupied a unique position, and through the inspiration of his work and counsel he stimulated the energies and ambitions of many of his students to successful careers of scientific investigation which in turn have added to the renown of the University.

While mourning the loss of one of those whose place can never be filled, we take consolation in the thought that his influence remains as a precious heritage to this Department and to the University.

Resolved, further, That a copy of these resolutions be transmitted to the family of Dr. Prescott and that they be spread upon the minutes of the Faculty and that a copy be furnished the University publications and the public press.

RESOLUTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

WHEREAS, the American Pharmaceutical Association has suffered a severe loss by the death, on February 25, 1905, of its former President, Albert Benjamin Prescott, and

WHEREAS, the American Pharmaceutical Association wishes to express its sorrow in the loss of our esteemed and beloved member who has efficiently and wisely served as its President, Chairman of the Council, and on various committees, be it therefore

Resolved, That in the death of Dr. Prescott, Pharmacy at large has lost a true and devoted servant, who, by introducing laboratory methods of instruction and by demanding higher entrance and curriculum standards in pharmaceutical education, has exerted an influence for the elevation of our calling that can scarcely be overestimated; be it further

Resolved, That by his singular modesty, gentleness of character, purity of motive, and catholicity of spirit he has endeared himself to all with whom he came in contact, and that his example will ever be an inspiration for good.

Resolved, That a copy of these resolutions be transmitted to the bereaved family, together with an expression of our profoundest sympathy.

RESOLUTIONS OF THE FACULTY OF THE SCHOOL OF PHARMACY.

WHEREAS, The Faculty of the School of Pharmacy of the University of Michigan has sustained an irreparable loss in the death of its Dean, Albert Benjamin Prescott; and,

WHEREAS, The Faculty of the School of Pharmacy wishes to record its deep sense of sorrow, caused by the removal from its midst of a wise leader and a beloved colleague, who for more than a quarter of a century has labored earnestly and unceasingly for the advancement of pharmaceutical education and for the welfare of the School of Pharmacy, be it therefore

Resolved, That by the death of Albert Benjamin Prescott, to whose efforts and labors the School of Pharmacy owes its high standing in the educational world, it has lost a most valuable executive, one whose sterling and unselfish qualities have gained the lasting respect, admiration, and love of every one with whom he came in contact; and

Resolved, That his colleagues and students will ever carry the recollection of that kindly face, that cordial and considerate manner, that forgetfulness of self in thoughtfulness for others, as a cherished and tender memory and inspiration to better work and a better life; and be it further

Resolved, That a copy of these resolutions be spread upon the minutes of the Faculty, and also that a copy, with the assurance of our profound sympathy, be conveyed to the bereaved family.

RESOLUTIONS OF THE PHILADELPHIA COLLEGE OF PHARMACY.

At the Annual Meeting of the Philadelphia College of Pharmacy, held March 27, 1905, the following resolutions were unanimously adopted:—

WHEREAS, Albert B. Prescott, Ph. D., the distinguished chemist, and teacher of Ann Arbor, Michigan, has, after long

and arduous services, ceased from his labors, and, through the inscrutable wisdom of our Heavenly Father, passed from works to reward, be it therefore

Resolved, That the Philadelphia College of Pharmacy places upon record its testimony to the great ability of our deceased friend, the value of whose labors in chemical and pharmaceutical science are gratefully acknowledged by this College.

Resolved, That his character as a man, his charity for all, and loving forbearance have endeared his memory to American Pharmacists.

Resolved, That the Philadelphia College of Pharmacy tenders to his widow its heartfelt sympathy in the loss which she has sustained.

Personal Tributes

Personal Tributes

By Professor F. W. Clarke, in "Science":

As a teacher Dr. Prescott was singularly successful, both in his personal relations with his students and as an organizer of reforms. He began his work at a time when lectures and recitations were commonly thought to be adequate instruments for scientific teaching; and when laboratory practice for students was a questionable novelty which only a few American schools had dared to try. From the beginning he took his stand on the side of modern methods, and organized his work along practical lines. The teaching of chemistry in schools of pharmacy and medicine was notably advanced through his efforts, and given a significance which, in this country at least, it had not had before. In this respect Prescott was one of several leaders; less conspicuous, perhaps, than some others, because of his modesty and quiet ways, but none the less potent and influential. He labored unpretentiously, but the results which he sought to accomplish were attained. The admirable organization of chemical work in the University of Michigan is the outcome of Prescott's broad and liberal views.

Dr. Prescott early recognized the value of research as a means of education, and so his students often shared in his investigations. A perfect list of his contributions to chemistry has not, I think, been prepared; but it would be by no means a short one. No brilliant or startling discovery fell to his lot, but then few chemists are so favored. A large volume of good work, well done, is all that most men can aspire to, and in that respect Dr. Prescott's reputation is secure. Those who knew

him will think most of the man himself, rather than of his achievements. He was kindly, modest, sincere, and lovable; and what better can be said of any one?

By Professor Oscar Oldberg, in "American Journal of Pharmacy":

Dr. Prescott rendered services of inestimable value to the progress of pharmacy and the elevation of pharmaceutical education in America, by his earnest and consistent adherence to high standards. The School of Pharmacy of the University of Michigan was the first university school of its kind in the United States. It offered a course occupying two full academic years devoted wholly to study and laboratory practice. Such a course had never before been attempted for the education of pharmacists in this country. The task of introducing it was a most difficult one in view of the absence of any definite educational requirements prescribed for pharmacists by law, so that very few students prepared to successfully undertake the program of work laid out in a full two years' course could be found in the drug stores at that time. American pharmaceutical college education thirty years ago was almost wholly dependent upon concurrent drug store training, and the requirements for graduation in pharmacy, therefore, included it. But the School of Pharmacy of the University of Michigan opened its doors to students who were not employed in drug stores, but who were prepared and ambitious to devote their whole time for two years to study. Pharmaceutical education, including substantial laboratory courses, has at length become firmly established in the United States largely through the perseverance, tact, and patience of Dean Prescott and those who followed in his footsteps.

Dr. Albert B. Prescott was a singularly unselfish, modest, helpful, generous, and lovable man.

By Doctor A. B. Lyons:

No one who ever came into intimate personal contact with Dr. Prescott can speak of him except in eulogy. It was my privilege to form his acquaintance very soon after he became connected with the University of Michigan. I was then only one of over five hundred medical students who listened to his lectures on organic chemistry. Yet for Dr. Prescott every student was an individual and the object of a sincere friendly interest. I can remember that the feeling among the students with regard to organic chemistry was that it belonged to the realm of transcendental science—something to be "crammed" for examinations and then forgotten as speedily as possible. Yet, in spite of himself, the student would find himself following with genuine interest the lectures of Dr. Prescott. It was evident that the subject was intensely interesting to *him,* and equally plain that he expected his hearers to share his interest.

He realized the difficulties experienced by the beginner in mastering the elementary facts and principles of a science as yet in its infancy, and he had set himself the task of making the path as free as possible from needless windings. He must have known that his audience was one not naturally sympathetic, yet no expression of his intimated such a knowledge or suspicion. And so his hearers, in spite of themselves, found actual pleasure in listening to the lecturer. Remembering the class of students that were at that time in the medical department of the University, I cannot affirm that all who listened carried away as a permanent possession a comprehensive knowledge of organic chemistry, but I am sure that for those who were really students, the purpose to forget what had been learned in that lecture course, after it had served its immediate purpose of carrying them through their examinations, was frustrated by the vivid interest that had been awakened by the lecturer.

Dr. Prescott was never a very rapid or fluent speaker. His words were always chosen with evident deliberation as though the value of each was exactly appraised. He knew how to simplify truth without belittling it in an attempt to suit it to the capacity of an immature mind. He always gave his audience credit for ordinary intelligence, avoiding only the needless use of undefined technical terms. In this he showed the instinct of the born instructor.

The secret of Dr. Prescott's success as a teacher after all lay in his individual interest in each student. To each he was a personal friend, sympathetic, and always ready with counsel and helpful suggestion. This was not policy. It was simply the spontaneous expression of a kindly nature, the fruitage of a simple but profound Christian faith. Add to these qualifications a demeanor singularly gracious and modest, yet full of dignity and firmness, and a temper absolutely imperturbable, and you have the realization of the ideal teacher.

But Dr. Prescott was more than a mere teacher. He had the breadth of comprehension, the depth of devotion to ideals, the strength and steadfastness of purpose that raised him to the rank not only of an educator but of a leader among educators. The University of Michigan is justly proud of its chemical and pharmaceutical laboratories, and still more of the record of original research that has been carried on in them. It can never forget that it is to the initiative and to the patient persistence of Dr. Prescott that the honor of all this is very largely due. Yet in so unostentatious a way did he achieve his successes that they seemed to some to have come to him accidentally.

In truth, success was to him only an incident in life. The personality of the man was more than any achievement of his. So we who were his pupils may remember little of the detail of his instruction, but we shall never forget the revelation that came to us through his life of the possibility of having within

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us the kingdom of heaven. The serene air he breathed had in it no taint of selfishness or of jealousy. Life for him meant opportunity for strenuous endeavor—its greatest privilege the service of one's fellows.

An active judicial mind, a large warm heart ever going out in words and deeds of helpfulness, a soul above discontent and knowing no such thing as dishonor—these make up the man whose memory will be forever green in the heart of every one who was privileged to know him.

By Professor Alfred Senier, of Queen's College, Galway:

As one of the late Professor Prescott's earliest students I am glad to have an opportunity of expressing my many obligations to him.

Looking back over the more than thirty years which have elapsed since I worked under his guidance in Ann Arbor, I see before me a distinct picture of the interior of the larger laboratory, the benches where we students were working, and the railed-off bench and desk of our professor in one of the corners. I can recall distinctly how we admired our professor; how we watched for the announcements of those discoveries of his which were making for him the high position which he attained among the world's organic chemists; how easy it seemed to us to learn from him; how he led us through the known and over the boundary into the unknown, and how thus we made our first discoveries.

Still, if I ask myself what has proved of the greatest value to me of what I learned from my old teacher and friend, I think that, more important than the training he gave me in science, have been the lessons I learned from him in conduct, conduct especially in the relation of professor to student; lessons which have stood me in good stead on many an occasion since,—lessons in patience, sympathy, honesty.

By Professor Edward D. Campbell:

Any one who has served for some time under Dr. Prescott could not but be strongly impressed with the fact that he was guided by clearly defined principles in all his actions as Director. Dr. Prescott was himself an excellent example of the highest type of university man, for in him were combined both the teacher and investigator. He realized that the greatness of the University depends primarily on the reputation of the individuals constituting its teaching force. While he did not underestimate the importance of the University as a means of disseminating knowledge, he realized that the University had perhaps a higher function to perform in becoming an ever increasing source of knowledge. It was this latter idea which served to shape his policy in many matters connected with laboratory management. It was for this reason that many students in the senior year of their undergraduate course did advanced work, really research, equal to that required in many universities for higher degrees. The result of this has been that, while not so many higher degrees have been conferred, the men who have graduated from this laboratory have left with an independence of thought that has enabled them to stand favorably in comparison with the graduates of other laboratories. His strong desire to inspire in students a real love for their work was still further shown by the keen interest he took in the graduate-students and the important place he filled in the chemical colloquium, where the graduate and other advanced students meet for informal discussion of new work with members of the teaching force.

In his treatment of the men on his teaching staff Dr. Prescott was most just. Realizing as strongly as he did that the greatness of the University depended on the greatness of its men, he endeavored to inspire, by example and precept, the men of his staff to make something more than simply teach-

ers of themselves. He made one feel that only one-half his duty was accomplished when he had done the teaching assigned to him; that he owed a higher duty to the University in that he should develop himself in order that his scientific reputation should help to add at least a little to the luster of the University.

In the management of the finances of the laboratory, while he endeavored to keep expenses down as far as was consistent with proper attention to the necessities, he was always ready to assist as far as posssible in securing facilities for research. It was the keen interest he felt in the research work of everyone working under him that drew us so strongly to him, and made us feel that it was an honor to serve our apprenticeship under such a master.

By President James B. Angell, in his Commencement Address, June, 1905:

I cannot part with you without reminding you that in the life and character of one who, to our great sorrow, has been taken from us this year, we had a most beautiful example of the union in one mind of the passion for learning and the passion for research. In him was the most harmonious combination of love for the great fundamental beliefs of Christianity with the spirit of welcome for every revelation of new truth, whether by scientific investigation or by sound biblical scholarship. Dr. Prescott, the senior professor in this university, was an ideal illustration of the Christian scientific scholar. No child was more modest and humble in his own estimate of his worth. No saint was more firm in his loyalty to his Lord and Master. No scientist was more ardent in research after new scientific truth. No disciple was more convinced that his research was sacred work, and that every discovery he made of chemical facts or chemical laws was a revelation of the divine

mode of operation. But antecedent to all research no student was more assiduous in learning all that the wisdom of other investigators had to communicate to him as the ground-work for his own quest. Long will his influence abide with us. The memory of his many years of conspicuous service, and still more of his pure and beautiful character, will remain as one of our most precious treasures. May it inspire each one of us to combine in due proportion as he did the old and the new, culture and research, the most genuine scientific spirit with the sincerest piety, devotion to God and love for his fellow man.

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